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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/597,139

07/12/2006

Scott David Keniston

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EXAMINER

HUTCHINS, CATHLEEN R

ART UNIT

PAPER NUMBER

3672

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,139	<b>Applicant(s)</b> KENISTON ET AL.	
	<b>Examiner</b> CATHLEEN R. HUTCHINS	<b>Art Unit</b> 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/20/2006</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because incorrect shading is used. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 2 and 8 objected to because of the following informalities: the claims do not end in periods. Appropriate correction is required.
3. Claim 8 objected to because of the following informalities: "superior 25 characteristics" should be "superior characteristics", and the inertial survey package is

selected from... indicates that at least two groups are given, namely commercially known inertial survey packages, and impact, which does not make sense. It is assumed that applicant intended that a commercially known inertial survey package is selected for its superior resistance to vibration and impact. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 4 rejected under 35 U.S.C. 102(b) as being anticipated by Ho, US5044198, granted 9/3/1991.

a. Regarding claim 1, Ho teaches A method of surveying drill holes comprising the steps of feeding a survey tool **Col 3: 31-46, wherein the bottom hole assembly (BHA) contains the surveying tool**, into a borehole on the end of a drill string as part of the hole drilling operation, activating the survey tool once drilling is completed **col 11: 48-51, wherein measurements taken while tripping out of the well must be done when the survey tool is activated**, and taking position readings from the survey tool as the drill string is withdrawn from the hole **col 11: 48-51, wherein tripping out of the well is the same as withdrawn from the hole**. The position readings are taken from the survey tool as the withdrawal of the tool drill string is temporarily halted for the removal of each drill rod from the drill string **wherein tripping out of a borehole requires a**

**drill string to be temporarily halted for removal of drill rods, and position readings are taken continuously during tripping out, therefore would also be taken during pauses for disconnecting drill rods.**

6. Claims 5-9 rejected under 35 U.S.C. 102(b) as being anticipated by Bell, US3791042, granted 2/12/1974.

a. Regarding claims 5-9, Bell teaches an apparatus for surveying drill holes **26, capable of surveying holes** using a method incorporating the steps of feeding a survey tool into a borehole on the end of a drill string as part of the hole drilling operation, activating the survey tool once drilling is completed, and taking position readings from the survey tool as the drill string is withdrawn from the hole, **capable of performing these methods**, wherein the survey tool includes an inertial survey package **26**, a power source **battery described in col 4: 65**, a data logger **73, and 16**, the tool is mounted to the drill string by a damping system **130, wherein the cross hatching indicates a rubber material, which dampens vibration**, arranged to isolate the survey tool from vibration and acceleration induced in the drill string. The inertial survey package is selected from commercially known packages for superior resistance to vibration and impact when in a sleeping mode **wherein the package shown is known in the art, and resists vibration and impact from 130.**

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 2 and 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Ho as applied to claim 1 above, and further in view of Bell.

a. Regarding claims 2 and 3, Ho teaches all of the elements of claim 1, but does not teach the survey tool is maintained in a sleeping mode while drilling is undertaken, or that the survey tool is configured to sense the cessation of drilling to activate the survey tool once drilling is completed. Bell teaches the survey tool is maintained in a sleeping mode **col 4: 45-49, wherein the switch closing allows energy to flow to sensors, and therefore, with the switch open, the sensors are in a sleeping mode** while drilling is undertaken, and the survey tool is configured to sense the cessation of drilling **switch 13 closes after rotation of a drill bit stops** to activate the survey tool once drilling is completed. It would have been obvious to a person having ordinary skill in the art of designing surveying tools for drilling a borehole at the time of the instant invention to modify Ho in view of Bell to run the surveying tool downhole in a sleeping mode, for

purposes of conserving electricity and preventing erroneous measurements from being made due to drill bit motion, and to have the survey tool sense the cessation of drilling, in order to automatically activate the survey tool after drilling has stopped, which indicates that the tool is to be tripped out of the bore.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Alft, et al. teaches a navigation sensor for adjustable steering in boring.
- b. Dubinsky, et al. teaches using accelerometers for logging while drilling.
- c. Edwards teaches using an inertial sensor and damping.
- d. Hensley, et al. teaches logging while drilling while withdrawing the tubing after drilling.
- e. Jones teaches taking inclination readings as the drill string is drawn up, with a damping system for the inclinometer.
- f. Kirkhope, et al. teaches an inertial sensor and damper.
- g. Kostek, et al. teaches logging while drilling is equivalent to logging while tripping out of a wellbore.
- h. Kruspe, et al. teaches an inertial sensor and damper for MWD.
- i. Molnar teaches an inertial guidance system
- j. Pomerleau teaches a logging tool mounted to the drill after the drill is sent downhole, then collecting data while tripping.
- k. Shirasaka, et al. teaches an inertial sensor and damper for MWD.

I. Tang, et al. teaches logging while tripping, taking shear velocity measurements, with isolation component damping the measuring tool.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CATHLEEN R. HUTCHINS whose telephone number is (571)270-3651. The examiner can normally be reached on Mon thru Thurs 7:30-5, alternate Fri 7:30-4 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cathleen R Hutchins/  
Examiner, Art Unit 3672

/Kenneth Thompson/  
Primary Examiner, Art Unit 3672